



Preface

Ladies and gentlemen,
dear customers and friends of Schulte Elektrotechnik!

The year 2014 will be marked by two important events in our company's history:

- Schulte Elektrotechnik turns 50!
- We will open a new building of extraordinary architecture featuring extraordinary ecological sustainability and including a so-called "Living Office".

I am very happy and also a little bit proud that I was able to be at the helm of our company and guide it for 50 years. We have reached complete independence and can rely on a healthy equity capital. At Schulte, the entire earnings stay within the company and are used for strategic investments and new developments. Among our products, these developments include the EVOLine Consolidation Point Systems in particular. With these systems the distribution of energy and data within a building is revolutionized and savings of up to 50% can be realized compared to conventional installations.

We will extend the EVOLine systems for use in offices and residential kitchens with new, patentable and highly functional devices and thus extend our product range.

Thereby we approach my personal and our common goal of offering an array of hightech products from one company, tested in every detail, *invented and made by Schulte Elektrotechnik Lüdenscheid*.

The investment into our new building warrants further explanation:

- We had to build a demonstration centre for our successful Consolidation Point Systems, since obviously it is impossible to demonstrate already installed systems on site.
- Instead of a sterile showroom environment, we want to demonstrate our products under real work place conditions in a so-called "Living Office". At the same time, this "Living Office" serves as our laboratory to experiment with newly developed products.
- Beside the emphasis on high tech and new developments for the future we have another important goal: We want to use ecologically sound and highly functional pioneering systems which use geothermic energy and concrete core activation - at the same time reducing our own energy costs. Already our first building erected in 1976 used and still uses the heat generated during plastics production for the heating of the building.
- And last but not least: We will increase our production space.

We will be happy to show visitors our new building, in particular demonstrating the geothermal approach. I warmly welcome all visitors and will gladly answer any questions personally.

Please visit us in the Sauerland region.

Sincerely yours,



Siegfried Schulte
Founder and Owner
Schulte Elektrotechnik



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Innovations in the smallest space.

EVoline® Square80

80 mm cable apertures can be found on every desk = e-Place standard.
 Square80 uses these openings in a functional and intelligent way.



Patents pending

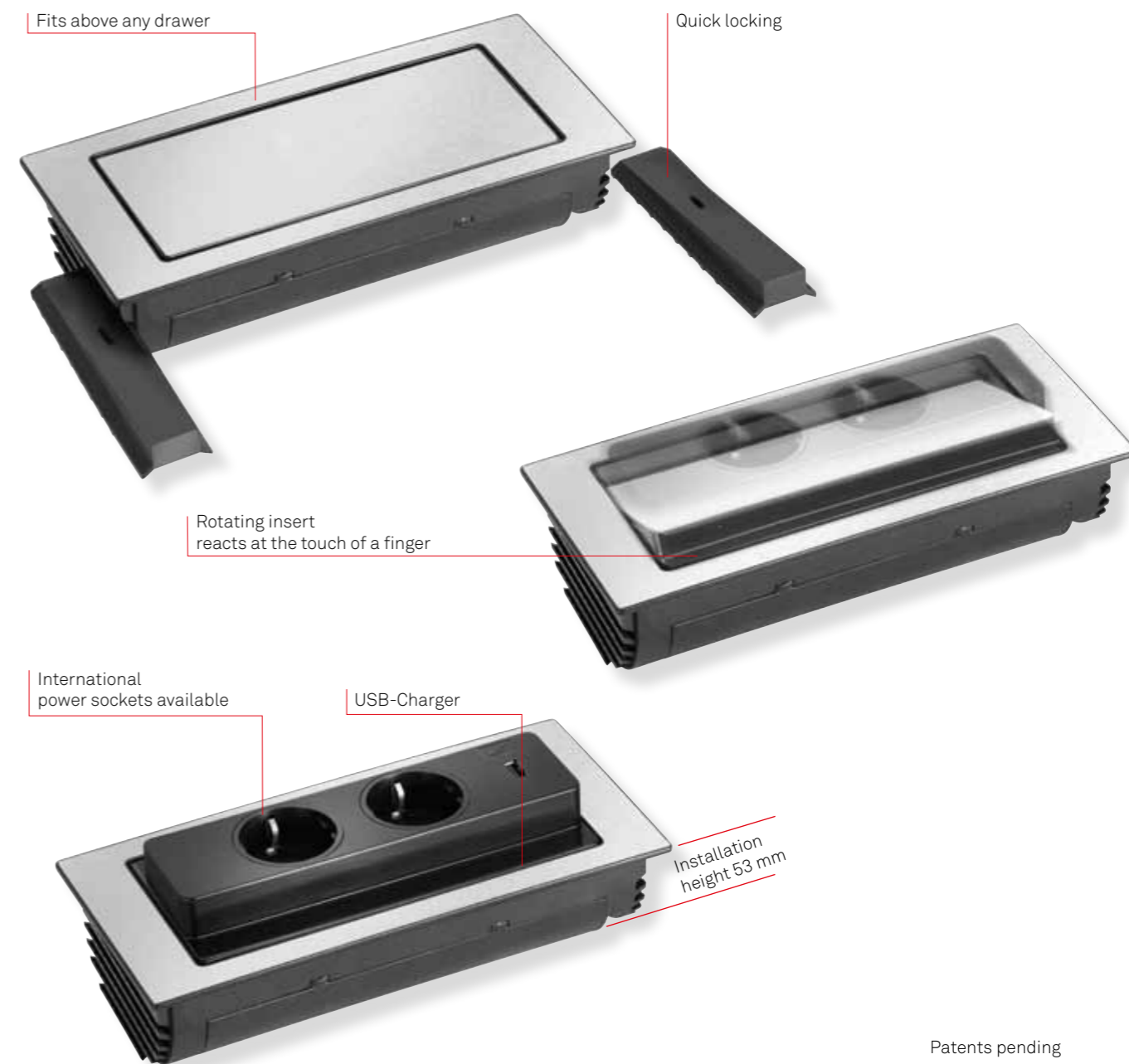


Kitchen + Water = No Problem

EVoline® BackFlip

Developed for kitchens.
Protected against liquid spillages.
Fits above any drawer.
Opens at the touch of a finger
To close just turn.
Quick and easy to mount.

For offices:
A highlight of superior design.



Patents pending



Uses any corner. For kitchens, bars and offices.

EVoline® V-Port

Design and function.
Fits into any corner.
Fits into any wall cabinet.
Easy to operate.

Quick mount
Easy connection
via special connector



EVoline Plug
is standard

Soft Touch
Release



International
double or triple
power sockets
available

USB charger
optional

▲ Fits into any Corner

▼ Fits into any wall cabinet





Intelligence below the desk.

EV0line® Rail and Rail+

Storage space with function.

Functionality and tidiness below the e-Place. Easy to install, at any location. Extend and equip as needed. Unparalleled in terms of economics and extendability. Connection to EV0line WireLane.

Movability enables minimum desk surface opening



Optional second level for peripherals.

Securely fastened. Instantly.

EVoline® Quicklock

Concealed usage.

EVoline Quicklock mounts to the desk surface in an instant, needs no tools, and is slip-free. Power and data cables are hidden by a cover.

Cables to the floor - with optional WireLane connection - are concealed.

Extra space for surplus cables below the Docks. EVoline Quicklock is adjustable in length and fits all EVoline Dock profiles.



End to end connection. Extendable. International.

EVoline® Express

EVoline Express Type 910 for a consistently modular power supply – variable number of sockets, international sockets, protection and safety modules and an array of different specialized switches available.

Custom colours optional.



Power Socket rails
2-4 way

Self-extinguishing
fire-retardant material

Individually tested and coded



International power
socket modules

Switch module



Protection and safety modules

Remote control option with integrated
EVoline Kinetics receiver (System EnOcean)

Current
in- and output
via connectors



Wieland GST 18i13



WAGO Winsta MIDI



Power supply cable with EVoline plug or right-angle plug



Award-winning function and design.

EVoline® Plug

Fits behind every piece of furniture.

Easy to use.

Prevents tripping hazards.



This plug comes in five versions: as single plug for self-assembly, with integrated cable, with cable and triple socket, with cable and GST 18 socket, with cable and safety coupling.

For its combination of smart ergonomics and minimalistic design this plug was awarded several prizes.



NEW!

Now available with integrated cable for high-volume orders by OEMs.



Optimized e-place for every user.
For office, home, meeting room, laboratory, kitchen,...

The EVoline® Philosophy

Different tasks require different solutions.
With a comprehensive standard range EVoline covers most challenges of electrification, data transport, multimedia- and audio connectivity, and safety of your e-place.
Moreover, the complete EVoline modular system offers maximum customization for all users.
EVoline delivers intelligent individualized solutions, be it for a single plug or the decentralised electrical installation of entire buildings.
Configure your own personal e-place and be your own designer – even with low volume orders.

We will be pleased to assist with any questions.



Standard Dock



Multimedia R-Dock

Modular. Configurable. International.

The EV0line® Modular System

Nearly unlimited possibilities.
All modules licensed internationally.
We are constantly extending our modular system.



Excerpt of our modular system (approximately 1000 modules)



EV0line Port



EV0line V-Port



EV0line Dock



EV0line Flip Top



EV0line V-Dock



EV0line U-Dock



EV0line R-Dock



EV0line Frame Dock



EV0line T-Dock

Planning with central ring main, EV0line consolidation points and EV0line floor outlets.

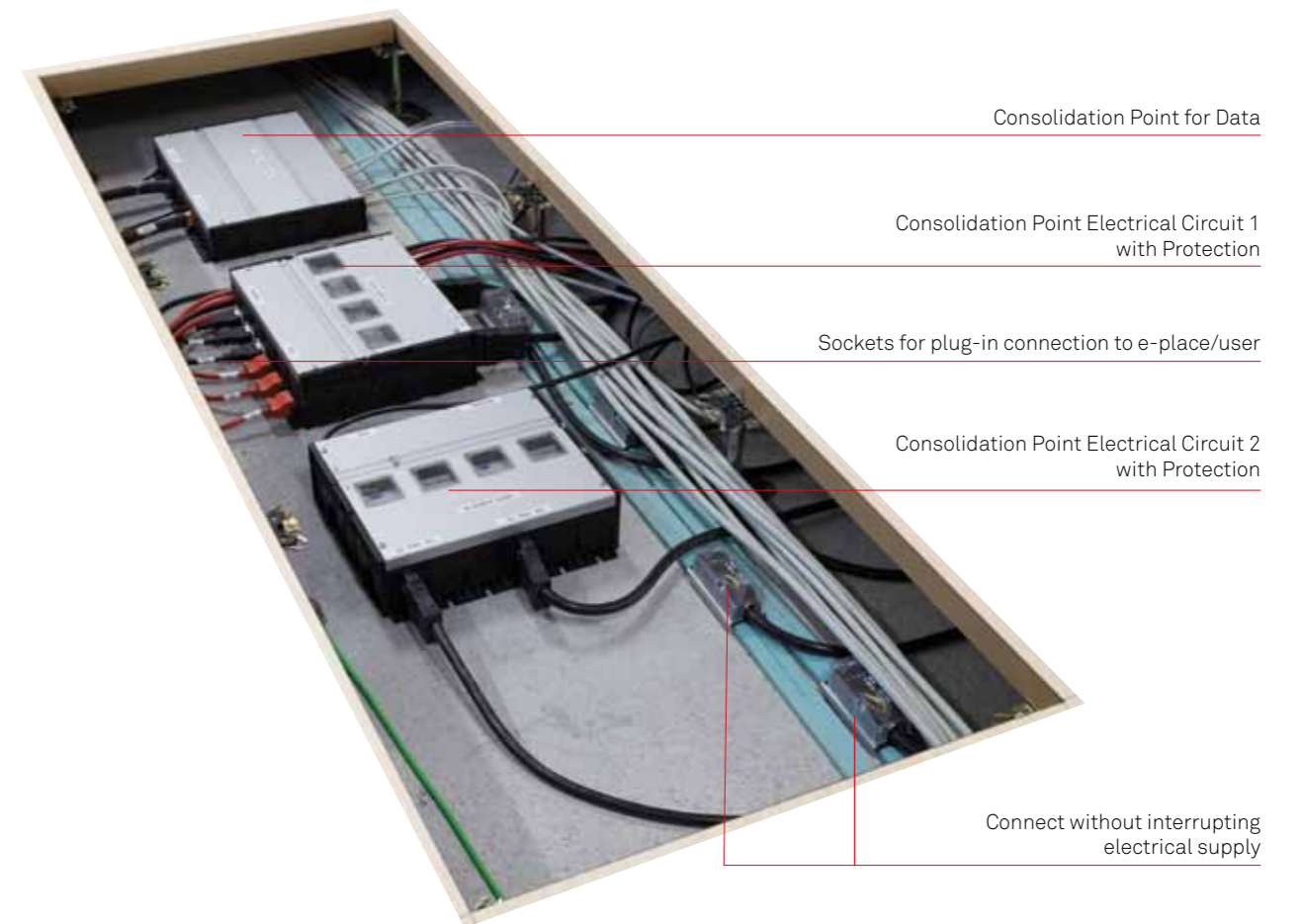
EV0line® decentralised electrical distribution system

Advantages:

Compared to conventional electrical installations reduce costs by 40%-50% and fire load by approximately 80%.

Flexibility is a free add-on: Simple and quick changes of use.
Secured circuits where needed: Prevents cascading effects.
Responsible use of resources.

Our systems are new to many investors, architects and planners.
Discuss your questions with our engineers.
We support your projects with our experience.



New Avenues with EV0line®

From Energy and Data Supply to e-Place and point-of-use.

We have challenged 100 years of traditional electrical installations:

- central distribution cabinet with fuses, chiseling slots, drilling holes, installing cables forth and back, installing flush-mounted boxes, sockets and switches, connecting, plastering etc.

This was our new approach:

Step 1
Cavity or double floors are standard in current day office buildings.

Step 2
Office buildings see frequent changes of office layouts (often within 3 yrs according to a study by Fraunhofer IAO) due to organisational changes, change of tenants etc. Utmost flexibility and short changeover times determine the value of the building (Fraunhofer IAO)

Step 3
Fixed installations are “out”, flexible and multifunctional are “in”! For our EV0line Consolidation Point-System (CP) this means:
- Every room is equipped with just one ring main of 400 V regardless of subsequent layouts or usages. Data lines are added if needed.

Step 4
(see layout examples A & B)
The layout for specific use is planned first. Questions considered are:

Will the room/fire compartment be used for
- a library, a doctor’s office, administrative offices, an open-plan office, a bank or ...?

Step 5
Now the planner for electrical distribution starts his work – he should always be consulted when planning the architecture of the building!

- Locations of CP-points and the necessary adaptors and switches for each workplace are determined
- Connection modules and floor outlets for each e-place (desk) are determined.
- Similar plans are made for data, audio and light controls (self-powered with EV0line Kinetics, System EnOcean)

Step 6
EV0line connection and distribution systems in or on top of the e-place are determined, individually according to user needs (one or two monitors, audio connection yes/no, local area network yes/no etc.)

We have seen the results of this approach in large scale objects of up to 4500 work places:

Cost savings of at least 40%
Fire load reduction of approx. 80%

And – most importantly – flexibility in case of layout changes comes free!
The environment is protected!
The environment benefits!

Not this way!

But this way!



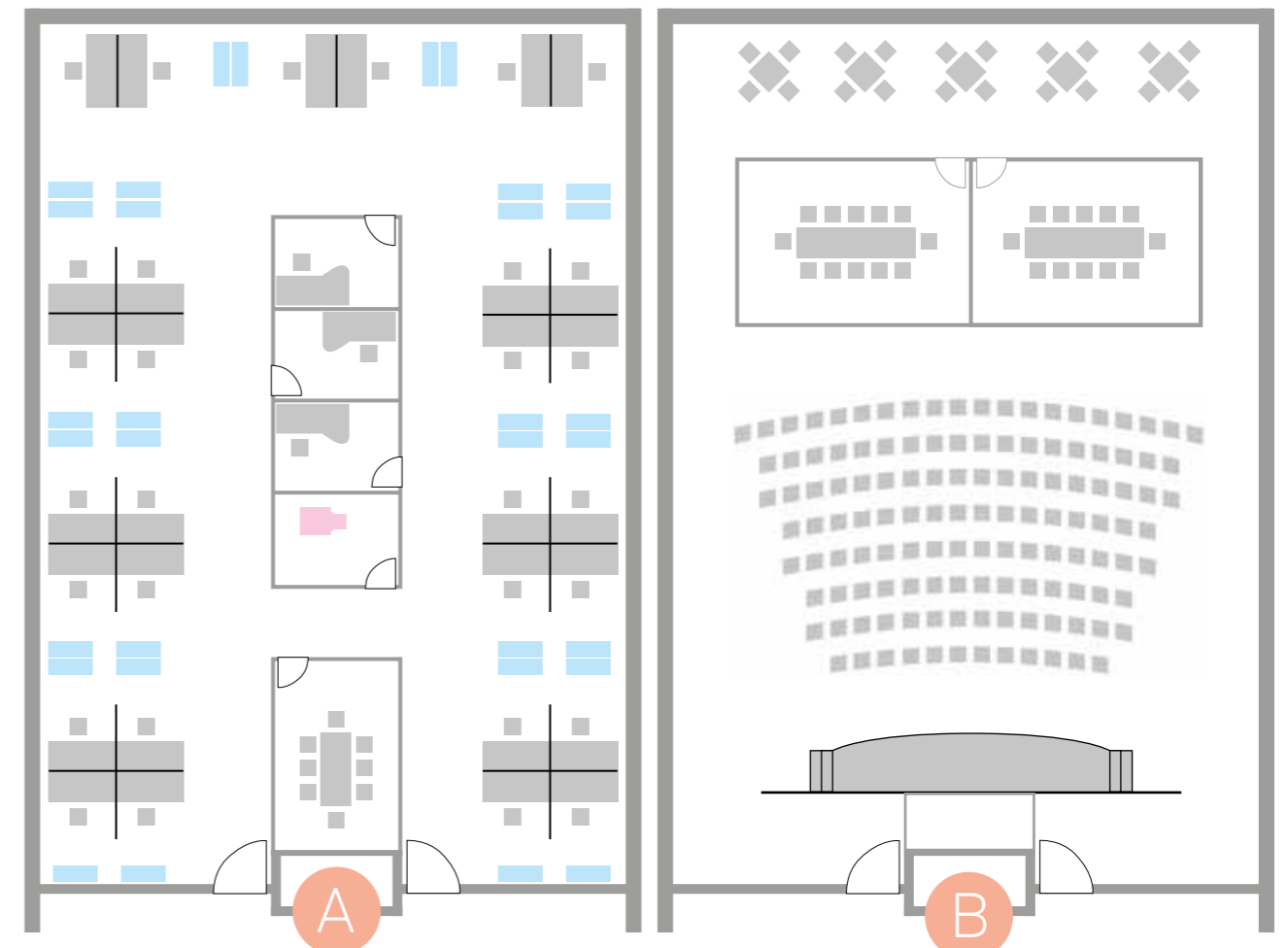
Moving into a prestigious new office building – floor boxes installed in a grid pattern



Picture taken two weeks later



EV0line floor outlet with EV0line WireLane situated according to room layout plan



Layout examples for the same floor space

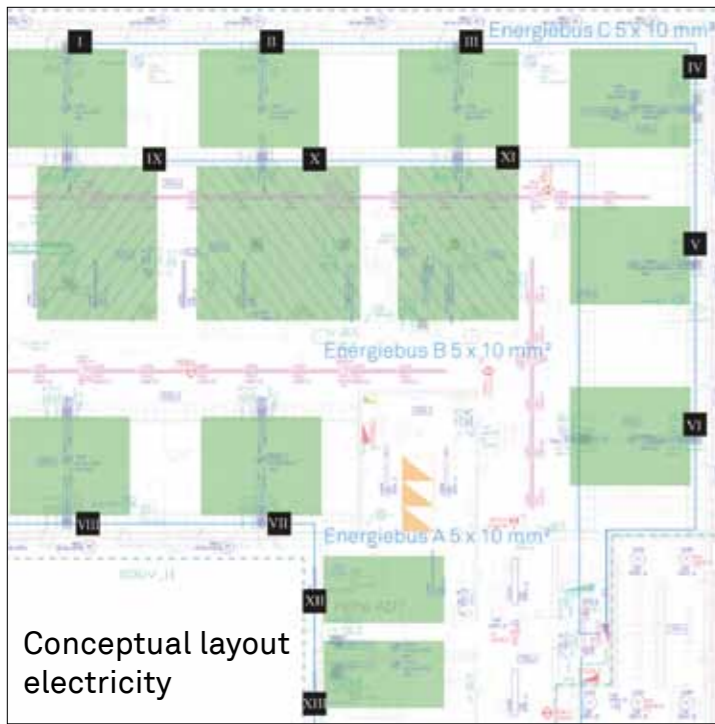
EV0line – the partner of investors, architects and planners. Support from day one.

Planning with EV0line®

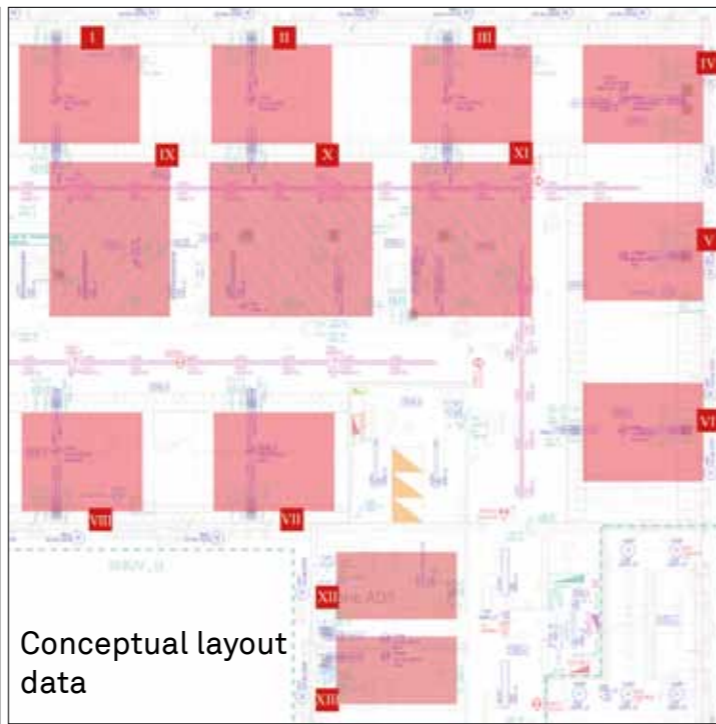
We support and advise architects and electrical planners from day one. We look at the room and workplace layout and develop concepts for electricity, data, EV0line floor outlets, building control, lighting up to the individual workplace configuration.

Contact us, we will demonstrate the potential for savings with our products in new or converted buildings.

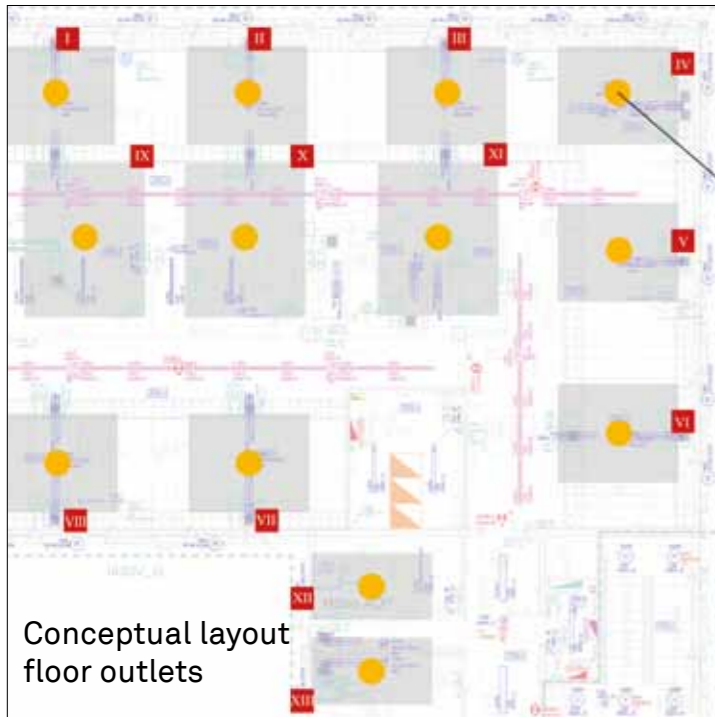
In a very short time, you will become an EV0line expert.



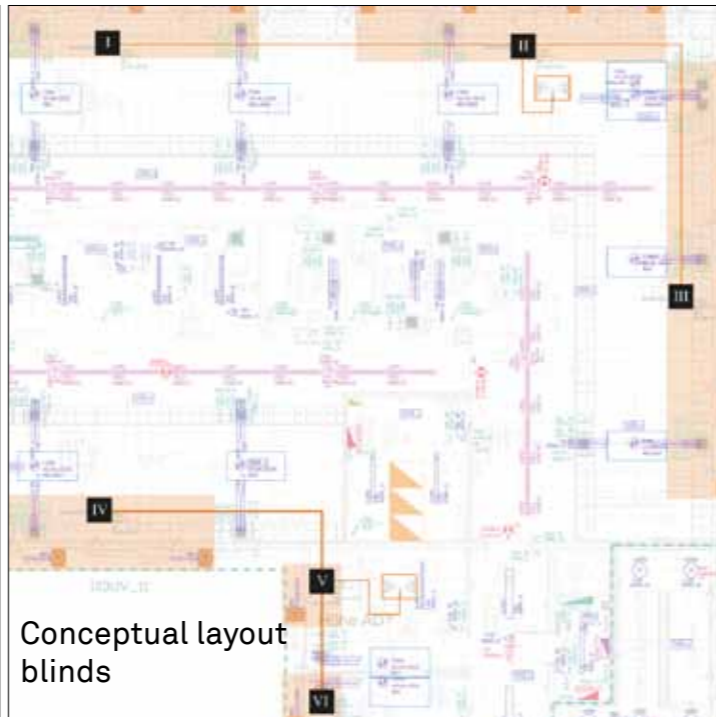
Conceptual layout electricity



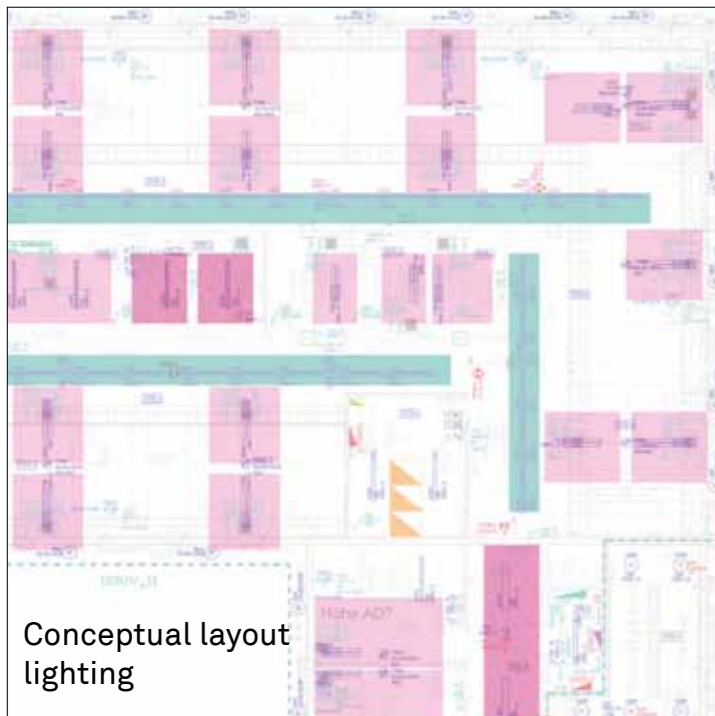
Conceptual layout data



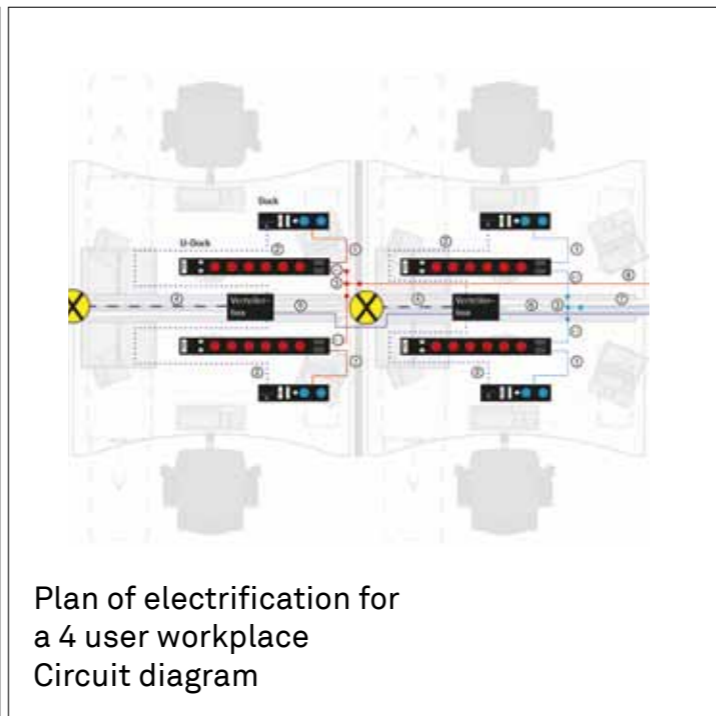
Conceptual layout floor outlets



Conceptual layout blinds



Conceptual layout lighting



Plan of electrification for a 4 user workplace
Circuit diagram



Consolidation Point for Electricity

Consolidation Point for Data

Consolidation Point with Wireless Control



EV0line Floor Outlets



Kinetics Presence Detector



EV0line Kinetics Wall Transmitter



Kinetics Wireless Transmitter



Kinetics Gateway



EV0line Dock on the Desk



EV0line U-Dock under the Desk

EV0line® at Vossloh

The traffic technology company Vossloh trusts EV0line. Following the principles of decentralised electrical distribution, the newly erected technical centre was equipped with consolidation points and separate wiring, one for the sensitive computer infrastructure and one for regular usage.





Decentralised Electrical Distribution used consequently.

Architect: Ben van Berkel

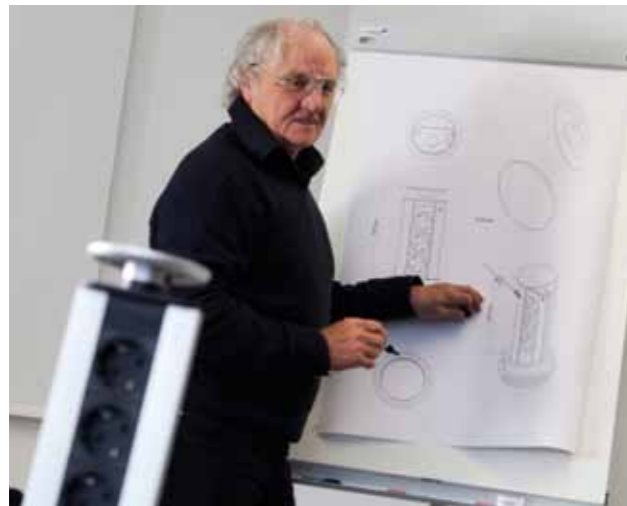
EVoline® at Fraunhofer IA0

Fraunhofer IA0 does not just research the future of work, it "lives" it in its futuristic award-winning new building. EVoline helped to develop the entire electrical infrastructure; from consolidation points to the individual equipment of the work places we support the innovative and flexible work culture of the institute.



Siegfried Schulte – the man behind EVOLine®

In the centre of medium-sized companies we usually find a person whose energy drives the company and its growth and whose thinking shapes the corporate philosophy. In the case of EVOLine this central person is Siegfried Schulte.



Siegfried Schulte started his own engineering office in Lüdenscheid in 1964. He set out to use his knowledge and energy to develop innovative protection switches for electrical engines. Already back then the goal was more than just a technical product. Siegfried Schulte strived to increase workplace safety: The goal was to reduce the risks during use of potentially dangerous equipment like circular saws or lawn mowers.

“Often very simple questions trigger important developments in economy and technology. It was the same in my case.”

In the old days, electrical equipment used to have a main and a protection switch. When overheating was detected, the protection switch cut the electricity, but after cooling down it switched on again without warning, due to the main switch still remaining engaged. Similarly dangerous were lawn mowers which could be left unattended with running engine and even tipped over without the motor stopping. Siegfried Schulte found amazingly simple solutions for both problems. He combined main and protection switch to a single unit, so that an overheated device stayed in the off position until it was re-engaged manually. In the case of lawn mowers, he used the principle of “deadmans switch” - hitherto only known from railway locomotives. The lawnmower motor only runs as long as a lever at the handle is pressed. This type of switch has been produced by the millions since and the continuing revenue generated is used for further technological developments.

A second principle of Siegfried Schulte has always been to think of the big picture – be it in product lines or when integrating several functions into one product. The first

motor protection switches were already offered complete with protective housing, plugs and cabling – a principle which in 1992 became the basis of MODelec, an award-winning connection system for motors and energy distribution.

“Right from the start, I have always thought in systems, not switches.”

The multiple steering column switch of the Audi 50 car illustrates systematic thinking in a single product especially well. For the first time in a car, Siegfried Schulte integrated all functions from indicator to lights to hazard warning lights and wipers into a single unit. He sold the patent – one of over 300 owned by his company -



Award presented by Johannes Rau, then President of the German Bundesrat (Federal Council of Germany)

because he did not see his own future in the car equipment business with its very own rules.

“With the onset of globalisation I quickly realized that delivering to the manufacturing companies – becoming an OEM, Original Equipment Manufacturer – would not have a future.”

However, the principle of a highly integrated steering column switch has made its way around the world and can be found in just about every modern vehicle.

In a globalised economy it is hard to establish innovative ideas. Successful designs are copied and produced, often illegally, at low wage locations. At first glance the counterfeit cannot be told apart from the original, but the true quality of the product is a different matter. Additionally, subcontractors increasingly feel price pressure. Under the moniker of “Continual Improvement Process” terms of contract and margins deteriorate gradually. Siegfried Schulte realized that in such an economic environment his company needed a second line of business to stay viable for the future, in addition to the core business of electrical switches. The field of electrical engineering stayed the same, but now the focus was not the machine, but the home and the office with its buildings.



1997
Awarded the Diesel Medal in Gold for the development of the first self controlling residual current device for decentralised applications and further inventions.

“I wanted to go my own way! Just as with the motor protection switches, again the protection of people and devices against electrical current was my main goal.”

In this new sector the state of technology was anything but satisfactory. Protection switches were only located (and often still are) in one central switch box in hallways or basements. If a hairdryer is dropped in the bath tub by accident, lives are saved because the residual current device (RCD) at the electricity panel in the basement engages and switches off the entire elec-

trical supply. Now the house is dark and dangerous falls can occur easily, because it is impossible to locate the switch in the dark basement. Siegfried Schulte developed the first self-controlling residual current device for decentralised locations, for example within a regular wall outlet as near as possible to the protected object. This invention earned him first a law suit for the patent (which he won) and then the Diesel-Goldmedal, awarded to him in 1997 by Johannes Rau, then President of the Federal Council of Germany. Most importantly, this invention opened up topics which interest Siegfried Schulte up to this day: Decentralised distribution of electricity. Switching and protection as close as possible to the object to be protected.

"I see the future in decentralised, manageable structures, in technology as well as in politics. Switzerland is my best example."

Modern day work places not only require energy but also data. In this day and age of job and time sharing, they have to serve changing requirements. Siegfried Schulte thinks that an e-place needs a modular concept to optimally serve the needs of the user. This includes direct connections at the desk surface avoiding repeated search for sockets and data connections in floor boxes. Electrification thus becomes part of the interior design and should therefore be



Prize awarded by Christa Thoben, then minister of economy, mittelstand and energy of the state of NRW

of high quality and excellent design.

Hidden in the double floor, but just as important, is the decentralised distribution.

"In the span of only a few years, personal computers, peripheral devices and cellphones have transformed the regular desk to an e-place, an electronic workplace. Here the answer is again: Decentralisation and individualisation."

Modules for switching and protection move as close as possible to the e-place so that any faults remain local and do not paralyze the entire office. Extended further, the idea of decentralised distribution results in proper planning of electricity and data supply, which uses ring mains, consolidation points and e-places to serve the requirements at the work place in an optimal way.

It can be adjusted to changing usages and room layouts and yet realize considerable savings of material, energy and costs.

"There will always be two winners: The brave and the environment."

With the concept of the e-place EVOLine evolved into a provider of modular systems for electrical and data connections. EVOline products can be found in offices and



hotels, as well as in residential kitchens. With its award-winning Plug EVOLine became known to retail clients as well. Today EVOLine is globally active with more

than 30 sales partners worldwide. Approximately 150 people work in the production plant at its home location. A team of creative engineers transforms the company's philosophy into patentable products and systems.

Some major inventions



1966
Combined ON/OFF and motor protection switch



1972
First multifunctional steering column switch for cars



1975
Push/Lock switch with motor protection



1975
Power switch for lawn mowers (deadmans switch)



1988
Safety battery switch with brake function



1992
MODelec modular connector system



1998
Power switch for high pressure cleaners



2002
EVOLine Port



2008
EVOLine Plug



From idea to final product – everything at one location and from a single source.

Hightech Production

Greatest vertical integration ensures the quality of our products. Be it automatized large scale production of millions of patented special switches per year, or customized EV0line components in small numbers, at Schulte each and every piece is tested and documented individually.

Whether plastic parts or metal parts with silver contacts: All parts are produced in our own plant, tested throughout the production process. This pattern continues in our production lines. We produce zero-defect quality.

It goes without saying that we don't make use of temporary workers or piece work to manufacture our hightech products. Our employees work self-responsibly.





Sauerland – Region of electrotechnical products.

Made in Germany

Our mixed male-female team of excellent engineers and developers create our entire product line with special emphasis on maximum installation efficiency and detail.

We build tools
– again in a modular system – predominantly in our own tool manufacture.

Outsourcing remains a foreign word for us. Therefore we have added to our company's logo:



Environmentally conscious. From day one.

Innovations within the building

We don't just talk about environmental protection, energy independence and increasing energy costs – we are actively involved.

Already in 1976, in our first plant, we used the excess heat of plastic component production to heat the entire building of 5000 square meters – against the advice of experts: “Too risky to install plastic pipes in an industrial floor; the costs would buy many tons of heating oil, etc.” Our system functions perfectly to this day!

In our new building we take new risks and enter uncharted territory. A young scientist published a study about a water circulation system in connection with geothermal energy and concrete core activation in floor and ceiling. Rooms equipped with this system maintained a “comfort zone” throughout summer and winter. The excess heat produced in summer is stored in the soil at a depth of 100 meters; the backflow is used for cooling.

Together with shades and blinds against direct impact of the sun an average temperature of 21 degrees is maintained throughout the year. In cold weather, the process is reversed.

In case of interruptions or lack of process heat from plastics production, a gas burner automatically engages to provide heat. The investments for this systems are quite high. We do not receive any subsidies for this new endeavour. However, we are sure that like in 1976, this time we will again be successful in our investment for us and the environment.



Markus Sommer, expert for near-surface geothermal energy. Doing a test bore.



Concrete core activation in the ceiling before application of concrete.

EVOLine®

ePlace Design

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